DES
DEPARTMENT OF ENVIRONMENT AND SUSTAINABILITY
air quality desert conservation PROGRAM sustainability

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PART 70
TECHNICAL SUPPORT DOCUMENT
(STATEMENT of BASIS)

APPLICATION FOR:
Operating Permit Significant Revision

SUBMITTED BY
Lhoist North America-Apex Plant/Trinity Consultants

For
Lhoist North America Apex Lime Plant
Source: 3

LOCATION:
12101 North Las Vegas Boulevard
Las Vegas, Nevada 89165

SIC code 3274, "Lime Manufacturing"
NAICS code 327410, "Lime Manufacturing"

July 10, 2020

EXECUTIVE SUMMARY

Lhoist North America of Arizona (LNA) is a manufacturer of lime and lime products located approximately 20 miles north of the City of Las Vegas, Nevada. The mining and processing operations are situated in Hydrographic Area 216 (Garnet Valley), a section of the Apex Valley Airshed. The legal description of the source location is: portions of T18S, R63E, Sections 23 and 26 in Apex Valley, County of Clark, State of Nevada. The source falls under SIC code 3274, "Lime Manufacturing," and NAICS code 327410, "Lime Manufacturing."

Garnet Valley is designated as an attainment area for ozone (regulated through NO_x and VOC), PM_{10}, CO, and SO_2. The LNA Apex Plant is a categorical source, as defined by AQR 12.2.2(j)(12). The LNA Apex Plant is a major stationary source for PM_{10}, $PM_{2.5}$, NO_x, CO, SO_2, and HAP (HCl), and a minor source for total HAP and VOC. The plant is also identified as a source of greenhouse gases. The Apex operation includes mining and excavating, limestone handling and processing, solid fuel handling, lime storage silos, fuel storage tanks, and truck and railcar loading and transporting. Four rotary lime kilns are used to convert limestone to quicklime. These kilns can be fired by coal, coke, or natural gas.

Table 1 summarizes the source's potential to emit each regulated air pollutant from all emission units addressed by this Part 70 Operating Permit.

Table 1: Potential to Emit

Pollutant [1]	PM_{10}	$PM_{2.5}$	NO_X	CO	SO_2	VOC	HAPs[2]	HAP (HCl)[2]	GHG[3]
Tons/year	335.85	203.09	1,905.45	974.30	1,646.77	9.40	22.97	21.12	697,459
Major Source Thresholds (Title V)	100	100	100	100	100	100	10/25[1]	-	-
Major Stationary Source Thresholds (PSD)	250	250	250	250	250	250	10/25[1]	-	-

[1] The PTE in this table is for informational purposes only. The enforceable emission limits are listed in Section III-A of the permit.
[2] Major source threshold for HAPs is 10 tons for any individual hazardous air pollutant or 25 tons for the combination of all hazardous air pollutants.
[3] Metric tons per year, CO2e. GHG = greenhouse gas pollutants.

DAQ will continue to require sources to estimate their GHG potential to emit in terms of each individual pollutant (CO_2, CH_4, N_2O, CF_6, etc.) The TSD includes these PTEs for informational purposes.

This lime manufacturing operation is subject to 40 CFR Part 60, Subpart OOO; 40 CFR Part 60, Subpart HH; 40 CFR Part 60, Subpart Y; 40 CFR Part 60, Subpart IIII; 40 CFR Part 63, Subpart ZZZZ; 40 CFR Part 63, Subpart AAAAA .

The engines subject to 40 CFR Part 60, Subpart IIII, satisfy the requirements of 40 CFR Part 63, Subpart ZZZZ, through compliance with 40 CFR Part 60, Subpart IIII.

DAQ has received delegated authority from the U.S. Environmental Protection Agency to implement the requirements of the Part 70 OP. Based on the information submitted by the applicant, supplemental information provided by the applicant, and a technical review performed by DAQ staff, the draft significant revision and minor revisions to the Part 70 OP to Lhoist North America Apex Plant are proposed.

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LIST OF TABLES

I. ACRONYMS

Table I-1: List of Acronyms

Acronym	Term
ANFO	ammonium nitrate-fuel oil
AQR	Clark County Air Quality Regulation
ATC	Authority to Construct
BLM	Bureau of Land Management
CF	control factor
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CD	control device
DAQ	Division of Air Quality
DES	Clark County Department of Environment and Sustainability
DOM	date of manufacture
EF	emissions factor
EPA	U.S. Environmental Protection Agency
EU	emission unit
g/dscm	gram per dry standard cubic meter
gr/dscf	grains per dry standard cubic feet
GHG	greenhouse gas
HAP	hazardous air pollutant
hp	horsepower
kW	kilowatts
NAAQS	National Ambient Air Quality Standard
NAICS	North American Industry Classification System
NO_X	nitrogen oxide(s)
$PM_{2.5}$	particulate matter less than 2.5 microns in aerodynamic diameter
PM_{10}	particulate matter less than 10 microns in aerodynamic diameter
PSD	prevention of significant deterioration
PTE	potential to emit
RACT	Reasonably Achievable Control Technology
SCC	Source Classification Code
SIC	Standard Industrial Classification
SO_2	sulfur dioxide
SOP	standard operating procedure
TPH	tons per hour
UTM	Universal Transverse Mercator
VGF	vibrating grizzly feeder
VMT	vehicle miles traveled
VOC	volatile organic compound

II. SOURCE INFORMATION

A. GENERAL

Permittee:	Lhoist North America of Arizona Inc
Mailing Address:	12101 North Las Vegas Boulevard, Las Vegas, Nevada 89165
Responsible Official:	Sean Brennan, Apex Production Manager
Phone Number:	(702) 227-4935
Source Location:	12101 North Las Vegas Boulevard, Las Vegas, Nevada 89165
Hydrographic Area:	212, The Las Vegas Valley
SIC Code:	3274 - "Lime Manufacturing"
NAICS Code:	327410 - "Lime Manufacturing"

B. DESCRIPTION OF PROCESS

The Apex operation includes mining and excavating, limestone handling and processing, solid fuel handling, lime storage silos, fuel storage tanks, and truck and railcar loading and transporting. Four rotary lime kilns are used to convert limestone to quicklime. These kilns can be fired by coal, coke, or natural gas. Table II-B-1 lists the emission units covered by this operating permit.

Table II-B-1: List of Emission Units and $PM_{2.5}$ / PM_{10} PTE (not including baghouse and binvent stack emissions)

EU	Source EU Identifier	Process Description	Throughput	EF (lbs/ton)		PTE (tons/yr)	
				$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}
Mining Operations							
Q101	N/A	Mining Ore and Removing Overburden	8,294,600 tons/year	0.0013	0.0089	5.39	36.85
Q103	N/A	Blasting	5,200,000 ft^2/year	2.77E-04 lbs/ft^2	1.85E-03 lbs/ft^2	0.72	4.81
Q104	N/A	Drilling	24,552 holes/year	0.101	0.676	1.24	8.30
QS101	Diesel Engine, 80 HP	Sprinkler Pump	8,760 Hours/year	2.20E-03 lbs/hp-hr		0.77	0.77
Limestone Processing							
P103	HO-101/PF-101	Open Stone Transfer Point	2,680,000	0.000013	0.000046	0.05	0.18
	GR-101	Open Stone Transfer Point	2,680,000	0.000013	0.000046		
	BC-103	Closed Stone Transfer Point	2,680,000	0.000013	0.000046		
P103a	JC-102	Stone Crushing	1,125,600	0.00044	0.0024	0.25	1.35
P106	BC-104	Closed Stone Transfer Point	4,569,480	0.000013	0.000046	0.09	0.95
	VS-202	Stone Screening	2,284,740	0.00005	0.00074		
P107	VS-203	Stone Screening	2,284,740	0.00005	0.00074	0.06	0.85
P109	BC-204	Closed Stone Transfer Point	1,889,480	0.000013	0.000046	0.02	0.06
	BC-225		670,000	0.000013	0.000046		
P109a	CC-201	Secondary Crushing	1,889,480	0.00044	0.0024	0.42	2.27
P112	BN-226	Closed Stone Transfer Point	670,000	0.000013	0.000046	0.11	0.38
	BN-226 Loadout	Open Stone Transfer Point	670,000	0.00031	0.0011		

EU	Source EU Identifier	Process Description	Throughput	EF (lbs/ton)		PTE (tons/yr)	
				$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}
P114	BC-205	Closed Stone Transfer Point	730,741	0.000013	0.000046	0.05	0.09
	BC-206	Closed Stone Transfer Point	538,201	0.000013	0.000046		
	BC-207	Open Stone Transfer Point	538,201	0.000013	0.000046		
	BC-209	Closed Stone Transfer Point	1,086,719	0.000013	0.000046		
	BC-210	Open Stone Transfer Point	1,086,719	0.000013	0.000046		
P115	BC-236	Closed Stone Transfer Point	385,080	0.000013	0.000046	0.05	0.07
	BC-237	Open Stone Transfer Point	385,080	0.000013	0.000046		
	BC-208	Closed Stone Transfer Point	1,279,259	0.000013	0.000046		
	BC-235	Open Stone Transfer Point	385,080	0.000013	0.000046		
	BC-Coarse 2	Open Stone Transfer Point	385,080	0.000013	0.000046		
P129	Loader Loading (dolomite)	Open Stone Transfer Point	233,408	0.00031	0.0011	0.07	0.26
	Loader Unloading (dolomite)	Open Stone Transfer Point	233,408	0.00031	0.0011		
Kiln Run Screening							
R101	BC-11	Closed Stone Transfer Point (underground)	778,026	0.000013	0.000046	0.05	0.34
	BC-12	Closed Stone Transfer Point	778,026	0.000013	0.000046		
	BC-13	Closed Stone Transfer Point	778,026	0.000013	0.000046		
	VS-04	Stone Screening	778,026	0.00005	0.00074		
R106	BC-14	Closed Stone Transfer Point	38,901	0.000013	0.000046	0.03	0.04
	BN-05	Closed Stone Transfer Point	38,901	0.000013	0.000046		
	BN-05 Loadout	Open Stone Transfer Point	38,901	0.00031	0.0011		
R108	BC-15, 16	Closed Stone Transfer Point	739,125	0.000013	0.000046	0.07	0.09
	BE-01, 02	Closed Stone Transfer Point	739,125	0.000013	0.000046		
	BC-17	Closed Stone Transfer Point	739,125	0.000013	0.000046		
	BC-18	Closed Stone Transfer Point	295,650	0.000013	0.000046		
	SB-01	Closed Stone Transfer Point	221,738	0.000013	0.000046		
	SB-02	Closed Stone Transfer Point	221,738	0.000013	0.000046		
	SB-03	Closed Stone Transfer Point	295,650	0.000013	0.000046		
R117	BC-217	Closed Stone Transfer Point	534,375	0.000013	0.000046	0.05	0.42
	BC-224	Closed Stone Transfer Point	534,375	0.000013	0.000046		
	VS-229	Stone Screening	1,068,750	0.00005	0.00074		
R120a	BC-231	Closed Stone Transfer Point	106,875	0.000013	0.000046	0.01	0.01
R120	BC-230	Closed Stone Transfer Point	961,875	0.000013	0.000046	0.02	0.04
	SB-04	Closed Stone Transfer Point	961,875	0.000013	0.000046		
Kiln 1							
K102	PH-01	Closed Stone Transfer Point	221,738	See Table III-A-2 Baghouse DC-01		0.02	0.13
	KN-01; 81.25 MMBtu/hr	Rotary Kiln 1	109,500				

EU	Source EU Identifier	Process Description	Throughput	EF (lbs/ton)		PTE (tons/yr)	
				$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}
	CO-01	Cooler	109,500				
K102a	Auxiliary Kiln Drive; Isuzu	49 hp Diesel Engine	500 hrs	0.0013 lbs/hp-hr		0.02	0.02
K104	SC-01	Lime Transfer	109,500	See Table III-A-2 Baghouse DC-20		0.03	0.03
	SC-02	Lime Transfer	109,500				
	BE-03	Lime Transfer	109,500				
K106	BN-06	Bin Feeding	8,760	0.00031	0.0011	0.15	0.95
	BN-06	Load Out	8,760	0.0323	0.2135		
K110	SC-04 (sealed)	Dust Transfer	3,285	0.00031	0.0011	0.06	0.07
	SC-05 (sealed)	Dust Transfer	3,285	0.00031	0.0011		
	SC-07 (sealed)	Dust Transfer	6,570	0.00031	0.0011		
	SC-08	Dust Transfer	12,909	Included with K102 Baghouse DC-01			
	BE-06 (sealed)	Dust Transfer	26,049	0.00031	0.0011		
	SC-15 (sealed)	Dust Transfer	26,049	0.00031	0.0011		
K110a	SC-45	Dust Transfer	13,140	0.00031	0.0011	0.02	0.02
	SC-46	Dust Transfer	13,140	0.00031	0.0011		
K114	BN-09	Bin Feeding	32,619	See Table III-A-2 Baghouse DC-04		0.02	0.02
	BN-09	Load Out	19,479				
Kiln 2							
K202	PH-02	Closed Stone Transfer Point	221,738	See Table III-A-2 Baghouse DC-02		0.02	0.13
	KN-02; 81.25 MMBtu/hr	Rotary Kiln 2	109,500				
	CO-02	Cooler	109,500				
K202a	Auxiliary Kiln Drive; Isuzu	49 hp Diesel Engine	500 hrs.	0.0013 lbs/hp-hr		0.02	0.02
K204	SC-02	Lime Transfer	109,500	See Table III-A-2 Baghouse K2-DC-505N or K2-DC-506S[1]		0.02	0.02
	BE-04	Lime Transfer	109,500				
K206	BN-07	Bin Feeding	8,760	0.00031	0.0011	0.15	0.95
	BN-07	Load Out	8,760	0.0323	0.2135		
K208	SC-06	Dust Transfer	3,285	0.00031	0.0011	0.05	0.07
	SC-09 (sealed)	Dust Transfer	13,410	0.00031	0.0011		
	SC-13 (sealed)	Dust Transfer	30,660	0.00031	0.0011		
	BE-07 (sealed)	Dust Transfer	30,660	0.00031	0.0011		
	SC-16 (sealed)	Dust Transfer	30,660	0.00031	0.0011		
K213	BN-10	Bin Feeding	30,660	See Table III-A-2 Baghouse DC-05		0.02	0.02
	BN-10	Load Out	24,660				

EU	Source EU Identifier	Process Description	Throughput	EF (lbs/ton)		PTE (tons/yr)	
				$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}
K215	DA-BN-502	Bin Feeding	6,000	See Table III-A-2 Binvent DA-DC-507		0.03	0.03
	DA-SC-505 (sealed)	Dust Transfer	6,000	0.00031	0.0011		
	DA-SC-506 (sealed)	Dust Transfer	6,000	0.00031	0.0011		
Kiln 3							
K302	PH-03	Closed Stone Transfer Point	295,650	See Table III-A-2 Baghouse DC-03		0.02	0.17
	KN-03; 91.10 MMBtu/hr	Rotary Kiln 3	146,000				
	CO-03	Cooler	146,000				
K302a	Auxiliary Kiln Drive; Isuzu	64.8 hp Diesel Engine	500 hrs.	3.62E-4 lbs/hp-hr		0.01	0.01
K304	SC-03 (sealed)	Lime Transfer	146,000	See Table III-A Baghouse DC-CA-04		0.03	0.09
	SC-04 (sealed)	Lime Transfer	146,000	0.00031	0.0011		
K306	BN-08	Bin Feeding	10,950	0.00031	0.0011	0.19	1.18
	BN-08	Load Out	10,950	0.0323	0.2135		
K308	BN-18	Bin Feeding	4,380	Emissions included in EU: K302		0.04	0.04
	SC-18	Dust Transfer	4,380				
	SC-18	Load Out	4,380				
	SC-11,12	Dust Transfer	17,520	0.00031	0.0011		
K309	D-SC-8306	Lime Transfer	146,000	0.00031	0.0011	0.09	0.32
	D-BC-8308	Lime Transfer	146,000	0.00031	0.0011		
	D-BC-8004	Lime Transfer	146,000	0.00031	0.0011		
	D-BE-8307	Lime Transfer	146,000	0.00031	0.0011		
K310	D-SC-53105	Lime Transfer	146,000	0.00031	0.0011	0.02	0.08
K311	SC-53106 (sealed)	Dust Transfer	17,520	0.00031	0.0011	0.01	0.01
Kiln 4							
K402	K4-PH-302	Closed Stone Transfer Point	961,875	See Table III-A-2 Baghouse K4-DC-316		0.02	0.54
	K4-KN-305; 281.25 MMBtu/hr	Rotary Kiln 4	475,000				
	K4-CO-309	Cooler	475,000	See Table III-A-2 Baghouse K4-DC-340			
K402a	Auxiliary Kiln Drive; Perkins	174 hp Diesel Engine	500 hrs.	4.90E-06 lbs/hp-hr		0.01	0.01
K404	K4-BC-501	Lime Transfer	471,673	0.00031	0.0011	0.17	0.54
	K4-BC-502	Lime Transfer	475,000	0.00031	0.0011		
	K4-BC-503	Lime Transfer	285,000	See Table III-A-2 Baghouse DC-30N			
	K4-BC-504	Lime Transfer	190,000				

EU	Source EU Identifier	Process Description	Throughput	EF (lbs/ton)		PTE (tons/yr)	
				$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}
K408	K4-DBN-1	Dribble Chute Bin	17,500	0.00031	0.0011	0.29	1.88
	K4-DBN-2	Dribble Chute Bin					
	K4-DBN-3	Dribble Chute Bin					
	K4-DBN-4	Dribble Chute Bin					
	K4-DBN-1	Dribble Chute Bin Load Out	17,500	0.0323	0.2135		
	K4-DBN-2	Dribble Chute Bin Load Out					
	K4-DBN-3	Dribble Chute Bin Load Out					
	K4-DBN-4	Dribble Chute Bin Load Out					
K410	Kiln Seal	Dribble Chute Bin	3,650	0.00031	0.0011	0.07	0.40
	Kiln Seal	Dribble Chute Bin Load Out	3,650	0.0323	0.2135		
K412	K4-SC-326	Dust Transfer	19,857	0.00031	0.0011	0.05	0.05
	K4-SC-327	Dust Transfer	19,857	0.00031	0.0011		
	K4-SC-328	Dust Transfer	19,857	0.00031	0.0011		
	K4-SC-329	Dust Transfer	19,857	0.00031	0.0011		
	K4-BE-330	Dust Transfer	19,857	0.00031	0.0011		
K417	K4-BN-508	Bin Feeding	19,857	See Table III-A-2 Binvent K4-DC-509		0.33	2.13
	K4-BN-508	Load Out	19,857	0.0323	0.2135		
K418	K4-SC342	Dust Transfer	3,327	0.00031	0.0011	0.01	0.01
Solid Fuel Handling							
F101	HO-40,41 (enclosed)	Fuel Transfer	600,631	0.00031	0.0011	0.29	1.04
	BC-40 (sealed)	Fuel Transfer	600,631	0.00031	0.0011		
	BC-44	Fuel Transfer	378,395	0.00031	0.0011		
	Loader Loading	Fuel Transfer	156,160	0.00031	0.0011		
	Loader Unloading	Fuel Transfer	156,160	0.00031	0.0011		
F104	CR-40 (enclosed)	Fuel Crushing	222,236	0.00088	0.0150	0.13	1.79
	SC-44 (enclosed)	Fuel Transfer	222,236	0.00031	0.0011		
F106	BN-41	Bin Feeding	31,885	0.00031	0.0011	0.02	0.04
	BC-41	Fuel Transfer	31,885	0.00031	0.0011		
F108	CM-41 (sealed)	Fuel Crushing	31,885	0.00088	0.0150	0.01	0.24
F110	SC-41 (sealed)	Fuel Transfer	936	0.00031	0.0011	0.03	0.03
	Reject Bin 1	Bin Feeding	936	0.00031	0.0011		
	Reject Bin 1 Loadout	Fuel Transfer	936	0.00031	0.0011		
F112	BN-42	Bin Feeding	35,073	0.00031	0.0011	0.02	0.04
	BC-42	Fuel Transfer	35,073	0.00031	0.0011		
F114	CM-42 (sealed)	Fuel Crushing	35,073	0.00088	0.0150	0.02	0.26

EU	Source EU Identifier	Process Description	Throughput	EF (lbs/ton)		PTE (tons/yr)	
				$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}
F116	SC-42 (sealed)	Fuel Transfer	1,030	0.00031	0.0011	0.03	0.03
	Reject Bin 2	Bin Feeding	1,030	0.00031	0.0011		
	Reject Bin 2 Load Out	Fuel Transfer	1,030	0.00031	0.0011		
F118	BN-43 (enclosed)	Bin Feeding	37,856	0.00031	0.0011	0.04	0.33
	BC-43	Fuel Transfer	37,856	0.00031	0.0011		
	CM-43 (sealed)	Fuel Crushing	37,856	0.00088	0.0150		
F122	SC-43 (sealed)	Fuel Transfer	1,096	0.00031	0.0011	0.03	0.03
	Reject Bin 3	Bin Feeding	1,096	0.00031	0.0011		
	Reject Bin 3 Load Out	Fuel Transfer	1,096	0.00031	0.0011		
F125	K4-SC-402 (sealed)	Fuel Transfer	117,421	0.00031	0.0011	0.08	0.21
	K4-BN-404	Bin Feeding	82,194	See Table III-A-2 Baghouse K4-DC-421			
	K4-BN-406	Bin Feeding	35,226				
	K4-WF-408	Fuel Transfer	82,194	0.00031	0.0011		
	K4-WF-409	Fuel Transfer	35,226	0.00031	0.0011		
	K4-BC-410	Fuel Transfer	117,421	0.00031	0.0011		
F131	K4-CM-413 (sealed)	Fuel Crushing	117,421	0.00088	0.0150	0.05	0.88
F132	K4-SC-419 (sealed)	Fuel Transfer	584	0.00031	0.0011	0.03	0.03
	Reject Bin 4	Bin Feeding	584	0.00031	0.0011		
	Reject Bin 4 Load Out	Fuel Transfer	584	0.00031	0.0011		
North Lime Handling							
L101	SC-24	Lime Transfer	10,438	0.00031	0.0011	0.04	0.04
	SC-25 (sealed)	Lime Transfer	10,438	0.00031	0.0011		
	BC-505/BC-20	Lime Transfer	316,307	Included with K104 Baghouse DC-20			
	BE-20	Lime Transfer	458,644				
L105	K4-BN-518	Bin Feeding	13,759	See Table III-A-2 Binvent K4-DC-519		0.02	0.02
	K4-SC-524	Lime Transfer	2,752	0.00031	0.0011		
L108	HM-20 (sealed)	Product Crushing	142,363	0.00088	0.015	0.06	1.07
L110	VS-20	Screening Product	444,885	Included with K104 Baghouse DC-20		0.04	0.08
	SI-02	Bin Feeding	117,450				
	SC-21 (sealed)	Lime Transfer	117,450	0.00031	0.0011		
L112	SI-01	Bin Feeding	117,450	Included with K104 Baghouse DC-20		0.05	0.14
	SC-23 (sealed)	Lime Transfer	117,450	0.00031	0.0011		
	SC-26 (sealed)	Lime Transfer	117,450	0.00031	0.0011		

EU	Source EU Identifier	Process Description	Throughput	EF (lbs/ton)		PTE (tons/yr)	
				$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}
L116	SI-06	Bin Feeding	117,450	Included with K104 Baghouse DC-20		0.03	0.07
	SC-27 (sealed)	Lime Transfer	117,450	0.00031	0.0011		
L118	SI-07	Bin Feeding	117,450	Included with K104 Baghouse DC-20		0.03	0.03
	SC-28	Lime Transfer	117,450				
	SC-20 (sealed)	Dust Transfer	1,000	0.00031	0.0011		
South Lime Handling							
L201	K4-BC-506	Lime Transfer	730,500	Included with S101 Baghouse DC-8001		0.38	1.25
	SC-4029	Lime Transfer	1,000	Included with K404 Baghouse DC-30N			
	SC-30	Lime Transfer	1,000				
	K4-BC-507	Lime Transfer	730,500	Included with K104 Baghouse DC-20			
	BE-30	Lime Transfer	730,500	0.00031	0.0011		
	BC-32 (enclosed)	Lime Transfer	730,500	0.00031	0.0011		
	Clean-up Screw Conveyor (enclosed)	Lime Transfer	730,500	0.00031	0.0011		
L206	CR-30	Product Crushing	611,832	See Table III-A-2 Baghouse DC-36		0.06	0.06
	BE-31	Lime Transfer	1,095,750				
	VS-30	Screening Product	1,095,750				
	SC-47	Lime Transfer	13,759	0.00031	0.0011		
	SC-48	Lime Transfer	13,759	0.00031	0.0011		
	SC-49	Lime Transfer	13,759	0.00031	0.0011		
L208	SI-04 (enclosed)	Bin Feeding	121,750	0.00031	0.0011	0.09	0.28
	SI-09 (enclosed)	Bin Feeding	121,750	0.00031	0.0011		
	SI-03 (enclosed)	Bin Feeding	121,750	0.00031	0.0011		
	SI-10	Bin Feeding	121,750	See Table III-A-2 Baghouse DC-37			
	SI-08 (enclosed)	Bin Feeding	121,750	0.00031	0.0011		
L209	SC-39 (sealed)	Lime Transfer	121,750	0.00031	0.0011	0.11	0.35
	SC-38 (sealed)	Lime Transfer	121,750	0.00031	0.0011		
	SC-38A (sealed)	Lime Transfer	121,750	0.00031	0.0011		
	SC-37 (sealed)	Lime Transfer	121,750	0.00031	0.0011		
	SC-36 (sealed)	Lime Transfer	121,750	0.00031	0.0011		
	SC-40 (sealed)	Dust Transfer	968	0.00031	0.0011		
	SC-41 (sealed)	Dust Transfer	968	0.00031	0.0011		
Hydrate							
H101	SC-101 (sealed)	Hydrate Transfer	71,550	0.00031	0.0011	0.01	0.04
H102	Small Bin (enclosed)	Bin Feeding	71,550	0.00031	0.0011	0.02	0.08

EU	Source EU Identifier	Process Description	Throughput	EF (lbs/ton)		PTE (tons/yr)	
				$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}
	SC-105 (sealed)	Hydrate Transfer	71,550	0.00031	0.0011		
H105	MX-106 (sealed)	Hydrate Transfer	71,550	0.00031	0.0011	0.05	0.11
	HY-107	Hydrator	93,015	See Table III-A-2 Baghouse DC-109			
	Hydrator Baghouse Burner; 1.83 MMBtu/hr	Gas combustion	16.0 MMcf/yr				
	SC-111 (sealed)	Hydrate Transfer	93,015	0.00031	0.0011		
H108	BE-113 (sealed)	Hydrate Transfer	93,909	0.00031	0.0011	0.04	0.17
	VS-115 (enclosed)	Product Screening	16,099	0.0006	0.0087		
	SC-117 (sealed)	Hydrate Transfer	93,015	0.00031	0.0011		
H109	CR-116 (sealed)	Product Crushing	894	0.00088	0.015	0.01	0.01
H110	SC-119 (sealed)	Hydrate Transfer	894	0.00031	0.0011	0.01	0.01
H116	SC-118 (sealed)	Hydrate Transfer	93,015	0.00031	0.0011	0.05	0.16
	BE-120 (sealed)	Hydrate Transfer	93,015	0.00031	0.0011		
	SC-121 (sealed)	Hydrate Transfer	93,015	0.00031	0.0011		
	SI-05	Bin Feeding	93,015	Included with H105 Baghouse DC-109			
Dolomite Handling							
D101	D-BN-201	Open Stone Transfer Point	466,816	0.00031	0.0011	0.08	0.27
	D-BC-202	Open Stone Transfer Point	466,816	0.000013	0.000046		
D104	D-BC-207	Open Stone Transfer Point	466,816	0.000013	0.000046	0.02	0.18
	D-VS-208	Screening Stone	466,816	0.00005	0.00074		
D104a	D-BC-213	Open Stone Transfer Point	443,475	0.000013	0.000046	0.01	0.01
D104b	D-BC-214	Open Stone Transfer Point	221,738	0.000013	0.000046	0.01	0.01
D104c	D-BC-8301	Open Stone Transfer Point	295,650	0.000013	0.000046	0.01	0.01
D105	D-BC-209	Open Stone Transfer Point	23,341	0.000013	0.000046	0.04	0.04
	D-BE-210	Open Stone Transfer Point	23,341	0.000013	0.000046		
	D-BN-211	Open Stone Transfer Point	23,341	0.000013	0.000046		
	D-BN-211	Load Out	23,341	0.000013	0.000046		
D106	D-BC-209E	Emergency Conveyor	23,341	0.000013	0.000046	0.02	0.02
	Loader Loading	Temporary Stockpile to Loader	23,341	0.000013	0.000046		
Dolomitic Lime Handling							
D201	D-HM-510 (sealed)	Product Crushing	146,000	0.00088	0.0150	0.06	1.10

EU	Source EU Identifier	Process Description	Throughput	EF (lbs/ton)		PTE (tons/yr)	
				$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}
D202	D-SC-511 (sealed)	Lime Transfer	146,000	0.00031	0.0011	0.06	0.12
	D-SC-512	Lime Transfer	146,000	See Table III-A-2 Baghouse DC-526			
	D-SC-513	Lime Transfer	146,000				
	D-SC-514	Lime Transfer	146,000	See Table III-A-2 Binvent D-DC-520			
	D-SC-515	Lime Transfer	146,000				
D208	D-SC-516 (sealed)	Lime Transfer	146,000	0.00031	0.0011	0.03	0.09
	SI-11, SI-12	Bin Feeding	146,000	Emissions Included with EU: D202			
D211	D-BE-4214	Lime Transfer	146,000	Emissions included with EU: PL102		0.03	0.03
	D-BN-504	Bin Feeding	146,000				
	D-SC-508 (sealed)	Lime Transfer	146,000	0.00031	0.0011		
Miscellaneous Operations							
O101	Ore Spillage	Open Stone Transfer Point	300	0.00031	0.0011	0.06	0.08
	Ore Spillage Reclaim	Open Stone Transfer Point	300	0.00031	0.0011		
	Ore Reclaim Unloading	Open Stone Transfer Point	300	0.00031	0.0011		
	Product Spillage	Lime Transfer	300	0.00031	0.0011		
	Product Spillage Reclaim	Lime Transfer	300	0.00031	0.0011		
	Product Reclaim Unloading	Load Out	300	0.0323	0.2135		
O107	Kiln 1-3 Dump/Bypass	Lime Transfer	50	0.00031	0.0011	0.03	0.03
	Kiln 1-3 Dump/Bypass Reclaim	Lime Transfer	50	0.00031	0.0011		
	Kiln 1-3 Dump/Bypass Unloading	Load Out	50	0.0323	0.2135		
O110	Diesel-Powered Emergency Generator; 302 hp, rental	Electricity Generation	500 hours/year	2.20E-03 lbs/hp-hr		0.17	0.17
5,000 Ton Storage Silo Reclaim System							
S101	Kiln Product to BC-8001	Lime Transfer	180,000	See Table III-A-2 Baghouse DC-8001		0.01	0.01
S102	BC-8001 to BE-8001	Bin Feeding	180,000	See Table III-A-2 Baghouse DC-8002		0.05	0.05
	BE-8001 to SC-8001	Lime Transfer	180,000	See Table III-A-2 Baghouse DC-8003			

EU	Source EU Identifier	Process Description	Throughput	EF (lbs/ton)		PTE (tons/yr)	
				$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}
	SC-8001 to SI-RC	Lime Transfer	180,000				
	SI-RC to BC-8002	Lime Transfer	180,000	See Table III-A-2 Baghouse DC-8004			
	BC-8002	Lime Transfer	180,000				
Quick Lime Truck and Rail Load Out System							
LO101	SC-5001	Lime Transfer	66,409	See Table III-A-2 Baghouse DC-5007		0.02	0.02
	TC-1001	Load Out	66,409				
LO104	BCF-5002	Lime Transfer	66,409	See Table III-A-2 Baghouse DC-5001		0.03	0.03
	BCF-5003	Lime Transfer	66,409				
	TC-1002	Load Out	132,818				
LO106	BCF-5004	Lime Transfer	66,409	See Table III-A-2 Baghouse DC-5002		0.03	0.04
	BCF-5005	Lime Transfer	146,000				
	TC-1003	Load Out	212,409				
LO109	BCF-5006	Lime Transfer	73,000	See Table III-A-2 Baghouse DC-5003		0.03	0.04
	BCF-5007	Lime Transfer	73,000				
	TC-1004	Load Out	146,000				
LO112	SC-5008	Lime Transfer	93,015	See Table III-A-2 Baghouse DC-5006		0.02	0.02
	TC-1005	Load Out	93,015				
LO114	BCF-5009	Lime Transfer	66,409	See Table III-A-2 Baghouse DC-5004		0.03	0.03
	BCF-5010	Lime Transfer	66,409				
	TC-1006	Load Out	132,818				
LO117	BCF-5011	Lime Transfer	66,409	See Table III-A-2 Baghouse DC-5005		0.03	0.03
	BCF-5012	Lime Transfer	66,409				
	TC-1007	Load Out	132,818				
Portable Screening Plant							
SP1	Hopper Loading & Unloading	Open Stone Transfer Point	1,500,000	0.000013	0.000046	0.02	0.05
	Conveyor Belt SP-2	Open Stone Transfer Point	750,000	0.000013	0.000046		
SP3	Screen SP-3	Stone Screening	750,000	0.00005	0.00074	0.05	0.31
	Stacker Belt 1	Open Stone Transfer Point	250,000	0.000013	0.000046		
	Stacker Belt 2	Open Stone Transfer Point	250,000	0.000013	0.000046		
	Stacker Belt 3	Open Stone Transfer Point	250,000	0.000013	0.000046		
SP7	Diesel-Powered Generator; 218 hp	Electricity Generation	2,500 hours/yr	0.0022 lbs/hp-hr		0.60	0.60
LD4	Loader Loading	Open Stone Transfer Point	750,000	0.000013	0.000046	0.02	0.03
	Loader Unloading	Open Stone Transfer Point	750,000	0.000013	0.000046		

EU	Source EU Identifier	Process Description	Throughput	EF (lbs/ton)		PTE (tons/yr)	
				$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}
Chat Transloader Operations– Alternate Operating Scenario							
TL201	Hopper Loading & Unloading	Open Stone Transfer Point	750,000	0.00031	0.0011	0.17	0.62
	Conveyor Belt to Truck	Open Stone Transfer Point	375,000	0.00031	0.0011		
TL202	Diesel-Powered Generator; 31 hp	Electricity Generation	2,500 hours/year	9.30E-04 lbs/hp-hr		0.04	0.04
Transloader							
TL1	Railcar Unloading (baghouse)	Product Transfer	75,000	0.00031	0.0011	0.01	0.04
TL3	Diesel-Powered Generator; 80 hp	Electricity Generation	940 hours/yr	0.0009 lbs/hp-hr		0.03	0.03
Lime Screening System							
L101a	Conveyor SC-24 to Conveyor D-SC-4221	Lime Transfer (From North Lime Handling)	10,438	0.00031	0.0011	0.02	0.02
	Conveyor D-SC-4221 to Bucket Elevator BE-03	Lime Transfer	10,438	0.00031	0.0011		
K104b	Conveyor SC-02 to Conveyor D-SC-4207	Lime Transfer (From Kiln 1)	146,000	0.00031	0.0011	0.02	0.08
PL101	Conveyor D-SC-4207 to Bucket Elevator D-BE-4214	Lime Transfer	146,000	0.00031	0.0011	0.02	0.08
PL102	Bucket Elevator D-BE-4214 to Bin D-BN-504	Bin Feeding	146,000	See Table III-A-2 Binvent D-DC-505		0.01	0.01
PL103	Bucket Elevator D-BE-4214 to Conveyor D-SC-4215	Lime Transfer	146,000	0.00031	0.0011	0.02	0.08
PL104	Conveyor D-SC-4215 to Dololime Screen D-VS-4216	Lime Transfer	146,000	0.00031	0.0011	0.05	0.11
	Dololime Screen D-VS-4216	Screening Product	146,000	See Table III-A-2 Baghouse D-DC-4217			
	Dololime Screen D-VS-4216 to Silo 6	Lime Transfer	146,000				
	Dololime Screen D-VS-4216 to Conveyor D-SC-4217	Lime Transfer	146,000				

EU	Source EU Identifier	Process Description	Throughput	EF (lbs/ton)		PTE (tons/yr)	
				$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}
PL105	Conveyor D-SC-4217 to Conveyor D-SC-4220	Lime Transfer	146,000	0.00031	0.0011	0.05	0.16
	Conveyor D-SC-4220 to Crusher D-HM-510	Lime Transfer	146,000	0.00031	0.0011		
PL106	D-SC-4218	Dust Transfer	0.59	0.00031	0.0011	0.01	0.01
PL107a	SN-50118	Product Screening	146,000	See Table III-A-2 Baghouse D-DC-50122		0.02	0.08
PL107b	CF-50116	Product Crushing	146,000				
PL107c	SC-50115	Lime Transfer	146,000				
	SC-50117	Lime Transfer	146,000				
	SC-50114	Lime Transfer	146,000				
	SC-50119	Lime Transfer	146,000				
PL107d	SC-50125	Dust Transfer	146,000	0.00031	0.0011		
Haul Roads							
VPW	Haul Roads	Paved & Unpaved	510,196 VMT			4.37	38.00
Reject Material Removal						**CF**	
A1	Reject Material Removal	Loader Loading	1,000,000		0.0025	0.124	0.31
		Loader Unloading	1,000,000		0.0025	0.124	

Open Storage Areas							
EU	**Source EU Identifier**	**Acreage**	**EF**		**CF^2**	**PTE (tons/yr)**	
			$PM_{2.5}$	PM_{10}		$PM_{2.5}$	PM_{10}
A01	Quarry Areas	15.18 acres	0.954 lbs/acre-day	6.3 lbs/acre-day	0.327	2.78	18.26
	Limestone at Hopper	1.72 acres					
	Fine Kiln Feed Stockpile	2.51 acres					
	Course Kiln Feed Stockpile	2.74 acres					
	Glass Flux Feed Stockpile	8.76 acres					
	Kiln 4 Chat Stockpile	0.04 acres					
	Chat Stockpile	0.61 acres					
	Solid Fuel Stockpile; Coal	1.13 acres					
	Solid Fuel Storage; Coke	0.38 acres					
	Dolomite Stockpile	0.82 acres					
	Fine Dolomite Stockpile	1.80 acres			0.124		

EU	Source EU Identifier	Process Description	Throughput	EF (lbs/ton)		PTE (tons/yr)	
				$PM_{2.5}$	PM_{10}	$PM_{2.5}$	PM_{10}
	Coarse Dolomite Stockpile	1.81 acres					
	Portable Screening Plant Stockpiles	2.25 acres					
	Dolomite at Hopper	2.01 acres			0.327		
	Waste Lime Stockpile	3.07 acres					
	Waste Flue Dust Stockpile	3.08 acres					
	Temporary Stockpile	0.25 acre					
	Aggregate Plant Stockpiles	7.33 acres			0.18		
Fuels Dispensing							
T101	Gasoline Dispensing	1,000 gallons	60,000	0	0	0	0

Table II-B-2: Baghouses and Binvents Stack Emissions

Baghouse/Binvent Identification	EU Controlled	EU Description	Stack Emissions[2] (Tpy)	
			$PM_{2.5}$	PM_{10}
DC-01	K102 & K110	Kiln 1	25.88	25.88
DC-02	K202 & K208	Kiln 2	25.88	25.88
DC-03	K302 & K308	Kiln 3	36.56	36.56
DC-04	K114	Kiln Dust Load Out	1.07	1.52
DC-05	K213	Kiln Dust Load Out	1.07	1.52
DC-20	L101, L110, L112, L116, L118, L201 & K104	North Lime Handling/Kiln 1	5.37	7.61
DC-30N	K404 & L201	South Lime Handling/Kiln 4	0.98	1.39
DC-37	L208	South Lime Handling	0.22	0.31
DC-36	L206	South Lime Handling	5.37	7.61
DC-109	H105 & H116	Hydrator	4.78	6.77
DA-DC-507	K215	Dust Blend Bin Vent	0.57	0.81
D-DC-505	D211 & PL102	Upset Bin Vent	0.54	0.76
D-DC-520	D202 & D208	Dolomitic Bin Vent	1.61	2.28
D-DC-526	D202	Dolomitic Lime Handling	1.61	2.28
K4-DC-316	K402	Kiln 4	44.10	44.10
K4-DC-340	K402	Kiln 4 Cooler	3.70	3.70
K4-DC-421	F125	Kiln 4 Fuel Bins	0.54	0.76
K4-DC-509	K417	Kiln 4 Dust Bin Vent	0.54	0.76

Baghouse/Binvent Identification	EU Controlled	EU Description	Stack Emissions[2] (Tpy)	
			$PM_{2.5}$	PM_{10}
K4-DC-516		Filter Receiver	0.64	0.91
K4-DC-519	L105	Start-up Bin	0.54	0.76
DC-8001	L201 & S101	5,000 ton Silo System/South Lime Handling	3.80	5.38
DC-8002	S102	5,000 ton Silo System	0.65	0.92
DC-8003	S102	5,000 ton Silo System	0.65	0.92
DC-8004	S102	5,000 ton Silo System	0.65	0.92
DC-5001	LO104	South Lime Handling	1.15	1.63
DC-5002	LO106	North Lime Handling	1.15	1.63
DC-5003	LO109	South Lime Handling	1.15	1.63
DC-5004	LO114	South Lime Handling	1.15	1.63
DC-5005	LO117	North Lime Handling	1.15	1.63
DC-5006	LO112	Hydrator	1.35	1.92
DC-5007	LO101	South Lime Handling	1.15	1.63
D-DC-4217	PL104	Pebble Lime Screening	1.65	2.33
K2-DC-505N[1]	K204	Kiln 2	0.44	0.63
K2-DC-506S[1]	K204	Kiln 2	0.44	0.63
DC-CA-04	K304	SC-03	0.52	0.52
D-DC-50122	PL107(a-c)	Lime Screening System	2.29	2.29

[1] K2-DC-505N and K2-DC-506S shall not operate simultaneously.
[2] PTEs are calculated emission rates based on the design flow rate and grain loading. See Appendix Table A-3 for details.

The descriptions for the emission units identified in Table II-B-3 are included in Table II-B-1. The table provides the PTE for pollutants that are not included in Table II-B-1.

Table II-B-3: Nonparticulate PTE for Storage Tanks, Diesel Engines, Blasting, Fuel Burning Units and Miscellaneous Activities[1] (tons/yr)

EU	NO_X	CO	SO_2	VOC	Other HAP[2]	Total HAP	HCl
H105	0.80	0.67	0.01	0.04	0	0.04	0
K102	343.49	122.97	413.09	0.99	0.24	14.62	14.38
K202	349.85	125.16	271.56	1.12	0.27	1.67	1.40
K302	478.15	171.55	419.75	1.40	0.34	2.63	2.29
K402	702.05	475.00	539.13	3.48	0.85	3.90	3.05
Q103	17.85	70.35	3.15	0	0	0	0
SP7	4.09	5.10	0.01	0.68	0	0.01	0
TL3	0.43	0.31	0.01	0.09	0	0.01	0
K102a	0.20	0.11	0.01	0.03	0	0.01	0
K202a	0.18	0.11	0.01	0.03	0	0.01	0
K302a	0.18	0.11	0.01	0.01	0	0.01	0
K402a	0.19	0.01	0.01	0.01	0	0.01	0
TL202	0.35	0.09	0.01	0.10	0	0.01	0

EU	NO_X	CO	SO_2	VOC	Other HAP[2]	Total HAP	HCl
O110	2.34	0.50	0.01	0.19	0	0.01	0
T101	0	0	0	0.34	0	0.01	0
QS101	5.29	2.34	0.01	0.87	0	0.02	0

[1]All units listed in this table are defined in Table III-A-1 including annual throughputs and PTE for $PM_{2.5}$ and PM_{10}.
[2]Other HAP includes benzene, ethyl benzene, formaldehyde, toluene, and xylene.

Table II-B-4: List of Insignificant Emission Units or Activities

Former EU Number	Description
T102	Diesel Tank, 10,000 gallon, 700,000 gallons per year
A101	Oil and Lubricant Use, 2,500 gallons per year
A103	Safety Kleen Solvent Use, 500 gallons per year
Z104	Thinner Use, 110 gallons per year

C. PERMITTING HISTORY

Table II-C-1 lists permitting activities. It starts with the last Part 70 OP issued, but does not include the current action described in Section D.

Table II-C-1: Permit History

Issue Date	Description
10/10/2017	Part 70 permit issued (renewal)
12/11/2017	Minor revision
7/26/2017	502(B)10 Letter

D. CURRENT PERMITTING ACTION

This action is a significant revision and several minor revisions to the Part 70 permit. The source is requesting the actions listed in Table II-D-1.

Table II-D-1: Initially Submitted Action

Date	Type	Description	Is Project Significant?	Related Emission Increase for Significance
02/08/2019	Minor Rev application reclassified as Significant Rev	1. Replace Kiln 3 cooler. 2. Modify Kiln 3 burner piping. 3. Replace Kiln 3 baghouse. 4. Change Kiln 3 and Dolomite Lime Handling to manage Dolomite or High Calcium lime (see also #7). Adding equipment. 5. Add nuisance dust collector to Kiln 3 area. 6. Add new lime crushing operation for dolomite after kiln. Adding	Significant because the application proposes a permit revision that exceeds the allowances provided in AQR 12.5.2.14(a)(1) (i.e. seeks to increase a	For Item #7: PM_{10} PTE Increase: ~2.30 tpy $PM_{2.5}$ PTE Increase: ~0.72 tpy

Date	Type	Description	Is Project Significant?	Related Emission Increase for Significance
		equipment. Included preliminary data only. 7. Increase throughput of dolomitic lime in existing Dolomitic Lime Handling System [EUs: D201, D202, D208, D211], existing Quick Lime Truck and Rail Load Out System [EUs: BCF-5005 and TC-1003 of LO106, and LO109], and existing Lime Screening System [EUs: K104b, PL101, PL102, PL103, PL104, PL105] from 109,500 tpy to 146,000 tpy (Significant Rev by itself). In a letter dated 2/28/2019, DAQ said this is not a minor revision. All items but item 7 were withdrawn by permittee in a letter dated 3/12/2019 requesting to process actions that are not significant revisions as separate minor revisions. Item 7 reclassified as a project that is a significant revision.	throughput and emission limit(s)).	

DAQ agrees all these action items can be "separate projects." Only item 7 is significant. DAQ finds items 4 and 7 are "related," but item 7 is already significant by itself, so it does not make a second significant action of item 4. The permittee would still do item 4 for flexibility, even if not doing item 7, to bring up dolomitic lime throughput to Kiln 3's capacity.

Table II-D-2: Subsequent Changes, Supplements and Associated Actions

Date	Type	Description	Significant Yes/No?	Related Emission Increase for Significance
02/20/2019	Minor Rev	1. Replace Kiln 3 cooler. 2. Modify Kiln 3 burner piping. 3. Change Kiln 3 and Dolomite Lime Handling to manage Dolomite or High Calcium lime. Adding equipment. 4. Add nuisance dust collector to Kiln 3 area as discussed in the 3/12/2019 Lhoist response to the 2/28/2019 letter from DAQ.	No	PM_{10} PTE Increase: 0.77 tpy $PM_{2.5}$ PTE Increase: 0.59 tpy
02/25/2019	PNF (notice & go)	Replace Kiln 3 baghouse.	No	N/A
05/03/2019	Minor Rev	Add 1 screw conveyor (SC-53105).	No	PM_{10} PTE Increase: 0.08 tpy

Date	Type	Description	Significant Yes/No?	Related Emission Increase for Significance
				$PM_{2.5}$ PTE Increase: 0.02 tpy
08/14/2019	502(b)10	A temporary auxiliary engine swap between Kiln 2 and Kiln 3 (down for maintenance) proposed as Kiln 2 auxiliary engine needed repair.	No	N/A
08/14/2019	502(b)10 or AMNR (12.4.3.2(B))	Kiln 3 auxiliary engine replacement (K202a failed and was replaced by K302a). LNA proposed a replacement engine for Kiln 3 (since previous Kiln 3 engine is now used with Kiln 2) - similar one with a turbocharger and more hp.	No	PM_{10} PTE Increase: -0.01 tpy $PM_{2.5}$ PTE Increase: -0.01 tpy CO PTE Increase: -0.08 tpy NOX PTE Increase: -0.02 tpy SO2 PTE Increase: -0.01 tpy VOC PTE Increase: -0.02 tpy
09/06/2019	PNF (notice & go)	Confidential process change that does not result in any emission increase.	No	N/A
11/25/2019	Minor Rev (12.4.3.2(B))	1. Add new lime crushing operation for dolomite to Lime Screening System. Adding equipment. Included updated engineering data. 2. Revise Drilling and Mining per FCE from 8/30/19 inspection instructing permittee to split mining EUs into separate lines for mining, drilling, blasting and ANFO per 2019 methods. The permittee made other adjustments to related throughputs as well.	No	PM_{10} PTE Increase: 5.23 tpy $PM_{2.5}$ PTE Increase: 2.74 tpy
3/24/2020	Email supplement	Remove SC-53107 from K311 as it was never installed	No	N/A

A consolidated PTE calculation spreadsheet arrived from the permittee on 12/20/2019. This spreadsheet was subsequently revised by the permittee on 2/4/2020. DAQ revised the spreadsheet on 2/18/2020 after concurrence with the permittee/consultant. DAQ revised the spreadsheet again on 3/24/2020 after receiving supplemental material from the consultant/permittee.

Table II-D-3: DAQ Changes

Updated GHG calculations. Circa 12/15/2019
Updated EU table PTE to avoid redundant values with baghouse/stack table. 2/14/2020
Updated SO_2 emission factors for engines to reflect default for 15ppm diesel and updated PTE. 2/18/2020
Clarified HAP and HAP (HCl) in the PTE tables. 2/18/2020
Added three lines for misc. chemical use to the EU list and updated VOC PTE. 2/18/2020 (moved to insignificant activities list 4/20/2020)
Reintroduced two lines for gasoline and diesel tanks to the EU list. 2/19/2020 (diesel tank moved to insignificant activities list 4/20/2020)
Added section regarding nonroad engines. 12/15/2019
Updated drilling and blasting conditions. 3/4/2020
Updated general conditions. 3/4/2020
Updated recordkeeping of baghouses and binvents as well as water spray system inspections. 3/5/2020
Revised all documents to reflect the withdrawal of SC-53107 from EU K311. 3/25/2020
Revised control conditions to reflect the COMS on the kilns is the primary compliance demonstration rather than Method 9. Revised monitoring conditions related to what to do if a COMS on the kilns fail or is suspect. 3/25/2020
Addressed comments received from courtesy draft of TSD, permit and calculations. 4/20/2020

E. ALTERNATE OPERATING SCENARIO

None proposed for these projects.

III. EMISSIONS INFORMATION

A. SOURCE-WIDE PTE

The Lhoist North America Apex Plant is a major Title V source for PM_{10}, $PM_{2.5}$, NO_x, CO, SO_2, and HAP (HCl) and a minor source for total HAP and VOC. The source is identified as major for greenhouse gases (GHGs).

Table III-A-1: Source-wide PTE (tons per year)[1]

PM_{10}	$PM_{2.5}$	NO_X	CO	SO_2	VOCs	Total HAP[1]	HAP (HCl)[2]	GHGs[3,4]
335.85	203.09	1,905.45	974.30	1,646.77	9.40	22.97	21.12	697,459

[1] The PTE in this table is for informational purposes only. The enforceable emission limits are listed in Section III-A of the permit.
[2] Major source thresholds for HAPs is ten tons for any individual hazardous air pollutant or 25 tons for combination of all HAPs.
[3] Metric tons per year.
[4] The increased GHG emission of the new kiln engine was added to the GHG previously calculated for this source.

B. ALLOWABLE EMISSIONS CALCULATIONS

See Section II-B for the EU and PTE tables.

Table III-B-1. Emission Summary Table[1]

Process Description	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	NO_x (tpy)	CO (tpy)	SO_2 (tpy)	VOC (tpy)	Total HAPs (tpy)[2]	HAP (HCl) (tpy)[2]
Material Handling and Transfer Operations	81.80	15.47	—	—	—	—	—	—
Area Piles	18.26	2.78	—	—	—	—	—	—
Baghouse Emissions	197.80	180.48	—	—	—	—	—	—
Haul Roads	38.00	4.37	—	—	—	—	—	—
Gaseous Emissions	-	-	1,905.45	974.30	1,646.77	9.40	22.97	21.12
Total Emissions	**335.85**	**203.09**	**1,905.45**	**974.30**	**1,646.77**	**9.40**	**22.97**	**21.12**

[1] The PTE in this table is for informational purposes only. The enforceable emission limits are listed in Section III-A of the permit.
[2] Major source thresholds for HAPs is 10 tons for any individual hazardous air pollutant or 25 tons for combination of all HAPs.

C. OPERATIONAL LIMITS

All previous operational limits remain in effect except the following, which were changed or added with this permitting action:

1. The permittee has revised Drilling Operations in the quarry to 24,522 holes per any consecutive twelve-month period.

2. The permittee has increased dolomitic lime throughput in the Dolomitic Lime Handling System and existing Lime Screening System to 146,000 tons per any consecutive twelve-month period.

3. The permittee has added production of material through the new crushing, screening, and conveying equipment in the Lime Screening System to 146,000 tons per any consecutive twelve-month period.

D. CONTROL TECHNOLOGY

No RACT requirement was triggered for any of the projects. The emissions for each project did not exceed the significance threshold. All previous requirements were retained and applied to new emission units within an existing process. Standard requirements were applied to new emission units at new processes.

E. MONITORING

All previous monitoring requirements remain in effect and will be applied to new equipment. Monitoring and recordkeeping of chemical usage will be added.

F. PERFORMANCE TESTING

None required for this permitting this action.

G. CONTROLS ANALYSIS

The increase in the throughput limits for process equipment and baghouses associated with lime screening, dolomitic lime handling, and quicklime loadout from 109,500 tpy to 146,000 tpy (item 7 of the original 2/8/2019 application) is deemed a significant revision under AQR 12.5.2.14(c) because of the increase in an operational limit. The related actual to future actual emission increase for this item is not significant, so a controls analysis is not required.

The balance of the proposed projects will not violate any applicable requirement, will not involve significant changes to existing monitoring, reporting, or recordkeeping requirements, will not require or change a previous DAQ case-by-case determination, and will not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement. The related actuals to future actuals emission increases for each project are not significant, so controls analyses are not required.

IV. REGULATORY REVIEW

A. LOCAL REGULATORY REQUIREMENTS

DAQ has determined that the following public laws, statutes, and associated regulations are applicable and affected by this action:

- AQR 13, “National Emission Standards For Hazardous Air Pollutants”
- AQR 14, “New Source Performance Standards”
- AQR 26, “Emission of Visible Air Contaminants”
- AQR 40, “Prohibitions of Nuisance”
- AQR 43, “Odors in the Ambient Air”

B. FEDERALLY APPLICABLE REGULATIONS

DAQ has determined that the following public laws, statutes, and associated regulations are applicable and affected by this action:

- 40 CFR Part 60, Subpart OOO—Standards of Performance for Nonmetallic Mineral Processing Plants
- 40 CFR Part 63, Subpart AAAAA—National Emission Standards for Hazardous Air Pollutants for Lime Manufacturing Plants
- 40 CFR Part 63, Subpart ZZZZ—National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

DAQ has determined that the applicability of 40 CFR Part 60, Subpart HH is not affected because the total throughput of Kiln 3 has not changed; only the proportion of Dolomitic vs High Calcium lime produced has changed.

It should be noted that 40 CFR Part 63, Subpart CCCCCC does not apply to this source. That CFR applies to area sources of HAP, and this plant is a major source of HAP. DAQ is required to have gasoline dispensing in the permit because of the federally-enforceable, SIP-approved version of AQR 52 (7/24/79), not the more recent one repealed in 2010, until it is removed. The SIP-approved version is applicable to gasoline tanks with 251-gallon capacity or more. DAQ is using the management practice conditions based on Subpart CCCCCC to have conditions consistent across all gasoline stations under its jurisdiction.

The 1979 SIP version of AQR 52 required Phase I control for gasoline dispensing sources, installed after January 1, 1979, in the Las Vegas Air Quality Maintenance Area. Lhoist is outside of the specified area. Therefore, the control requirements on EU T101 are not reevaluated with this permitting action.

V. COMPLIANCE

A. COMPLIANCE CERTIFICATION

Monitoring shall be performed and records shall be kept demonstrating compliance with all limitations specified in the permit, as revised for this action.

Requirements for reporting remain the same, as revised for this action.

Affected units that fell under the regulations and were covered by a permit shield were added to existing conditions or tables. No new conditions were required.

Table V-A-1: Affected Federal Requirements Related to Permit Shield

Citation	Title
40 CFR Part 63, Subpart ZZZZ	National Emission Standards for Stationary Reciprocating Internal Combustion Engines
40 CFR Part 63, Subpart AAAAA	National Emission Standards for Hazardous Air Pollutants for Lime Manufacturing Plants
40 CFR Part 60, Subpart OOO	Standards of Performance for Nonmetallic Mineral Processing Plants

VI. EMISSION REDUCTION CREDITS (OFFSETS)

None for this action.

VII. PUBLIC PARTICIPATION

As this action is a significant revision to a Part 70 OP, a public notice under AQRs 12.5.2.17–18 is required.

VIII. MODELING

Preconstruction modeling is not triggered for these permitting actions.

A. INCREMENT ANALYSIS

The Lhoist North America Apex Plant is a major source in Hydrographic Area 216 (Garnet Valley). Permitted emission units include four kilns, lime mining, and processing. Since minor source baseline dates for PM_{10} (December 31, 1980), NO2 (January 24, 1991) and SO_2 (December 31, 1980) have been triggered, Prevention of Significant Deterioration (PSD) increment analysis is required.

DAQ modeled the source using AERMOD to track the increment consumption. The average of 2017 and 2018 actual emissions were used in the model. Stack data submitted by the applicant were supplemented with information available for similar emission units. Five years (2011 to 2015) of meteorological data from the McCarran Station were used in the model. U.S. Geological Survey National Elevation Dataset terrain data were used to calculate elevations. Table VIII-A-1 shows the location of the maximum impact and the potential PSD increment consumed by the source at that location. The impacts are below the PSD increment limits.

Table VIII-A-1: PSD Increment Consumption

Pollutant	Averaging Period	Source's PSD Increment Consumption (µg/m³)	Location of Maximum Impact	
			UTM X (m)	UTM Y (m)
SO_2	3-hour	79.84[1]	688700	4025000
SO_2	24-hour	34.44[1]	687800	4025200
SO_2	Annual	0.03	687092	4024661
NO_X	Annual	2.66	688178	4027917
PM_{10}	24-hour	7.56[1]	686293	4025872
PM_{10}	Annual	0.40	686293	4025872

[1] Second High Concentration.

IX. ATTACHMENTS

Due to the large size and complexity of the spreadsheet used for calculations for the source, it cannot be usefully incorporated as part of the TSD. It is therefore incorporated by reference. See the 2/8/2019 permitting action folder for a Portable Document Format version. A live Excel spreadsheet is available for internal use in the source's Word/Excel folder.